

How Biological-Threat Disinformation Is Built, and What Prebunking Should Target

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Abstract

Readers can rarely check claims about outbreaks, laboratory leaks, or bioweapons on their own, so texts written to persuade them are hard to resist. Prebunking, an application of inoculation theory, answers this problem by teaching persuasion techniques before a reader meets false content, yet these techniques have not been measured for biological threats. This study builds a corpus of 8,253 biological threat news records from three open datasets and one original dataset drawn from EUvsDisinfo, the debunking database of the European External Action Service. Two coders classified 540 records against 22 propaganda techniques, agreeing with a Krippendorff's alpha of 0.81. A record uses 6.42 techniques on average, and six techniques cover 98.3% of the records. We also compared false records with real news on the same subjects. Fifteen of the 22 techniques appear only in false records, and four of them cover 92.3% of the false records while flagging none of the real ones. Loaded language is the exception, used by 73.7% of false records and 11.7% of real ones. The mix also changes with the threat described, since bioweapon and laboratory-leak content works through conspiracy framing, while vaccine and outbreak content selects and overstates evidence. Therefore, a prebunking message for biological threats can be short, should avoid teaching emotive wording as a sign of falsehood, and should be written for the kind of threat the reader will meet.

Keywords: Biosecurity; Content analysis; Health misinformation; Inoculation theory; Prebunking